

ABSTRACT OF THE DISCLOSURE

Limiter optics for an ignition feedback regenerative free electron laser amplifier have a pickoff mirror direct a portion of the output from the free electron laser through a focusing assembler. After expanding this pickoff beam spatially and temporally, the focusing assembler first focuses the expanded pickoff beam to a focal point, the expanded focused pickoff beam is then passed through a movable limiter plate which serves as an off switch if the pickoff beam is above a predetermined intensity and then refocuses the expanded pickoff beam back into the free electron laser to enhance the emission intensity of the output beam. The expanded mirror may be a half silvered mirror or a phased mirror with a plurality of mesas. The pickoff mirror may be convex. The half silvered mirror produces two segments in the pickoff beam with a time lag dependent on the thickness of the mirror. The phased mirror creates a plurality of parallel beams for the expander beam with a predetermined time lag for each of said paralleled beams created. Orientation of a phased mirror may be rotated to control spatial separation of parallel beams.